

## CLAIMS:

1. A residual image display device, comprising:
  - a substantially bar-shaped housing;
  - 5 a plurality of light-emitting diodes arranged along a longitudinal direction of said housing;
  - a light-emitting means for making each of said light-emitting diodes emit light individually;
  - a light-receiving means for outputting a signal based on  
10 photoelectromotive force of each of part of light-emitting diodes among said plurality of light-emitting diodes;
  - a scanning control means for controlling said light-emitting means to make each of said light-emitting diodes emit light which is positioned neighboring said each of part of light-emitting diodes that said light-receiving  
15 means outputs said signal based on the photoelectromotive force of, and for controlling said light-receiving means to output said signal in the light-emitting state;
  - a generating means for generating two-dimensional residual image data of said plurality of light-emitting diodes, based on the signals which are  
20 outputted from said light-receiving means and which are based on the photoelectromotive force of said part of light-emitting diodes;
  - a storing means for storing said two-dimensional residual image data;
  - and
  - a light-emission control means for controlling said light-emitting  
25 means to make said plurality of light-emitting diodes emit light based on said two-dimensional residual image data stored in said storing means, in

accordance with swinging of said housing.

2. A residual image display device, comprising:

a substantially bar-shaped housing;

5 a plurality of light-emitting diodes arranged along a longitudinal direction of said housing;

a light-emitting means for making each of said plurality of light-emitting diodes emit light individually;

10 a light-receiving means for outputting a signal based on photoelectromotive force of each of said plurality of light-emitting diodes;

a scanning control means for controlling said light-emitting means to make each of said light-emitting diodes emit light which is positioned neighboring said each of light-emitting diodes that said light-receiving means outputs said signal based on the photoelectromotive force of, and for  
15 controlling said light-receiving means to output said signal in the light-emitting state;

a generating means for generating two-dimensional residual image data of part of light-emitting diodes among said plurality of light-emitting diodes, based on the signals which are outputted from said light-receiving  
20 means and which are based on the photoelectromotive force of said plurality of light-emitting diodes;

a storing means for storing said two-dimensional residual image data;  
and

a light-emission control means for controlling said light-emitting  
25 means to make said part of light-emitting diodes among said plurality of light-emitting diodes emit light based on said two-dimensional residual

image data stored in said storing means, in accordance with swinging of said housing.

3. A residual image display device, comprising:

5 a substantially bar-shaped housing;

a plurality of light-emitting diodes arranged along a longitudinal direction of said housing;

a light-emitting means for making said light-emitting diodes emit light individually;

10 a light-receiving means for outputting a signal based on photoelectromotive force of each of said light-emitting diodes;

a scanning control means for controlling said light-emitting means to make each of said light-emitting diodes emit light which is positioned neighboring said each of said light-emitting diodes that said light-receiving means outputs said signal based on the photoelectromotive force of, and for controlling said light-receiving means to output said signal in the light-emitting state;

20 a generating means for generating two-dimensional residual image data used for light-emission control of said light-emitting diodes, based on the signals which are outputted from said light-receiving means and which are based on the photoelectromotive force of said light-emitting diodes;

a storing means for storing said two-dimensional residual image data; and

25 a light-emission control means for controlling said light-emitting means to make said plurality of light-emitting diodes emit light based on said two-dimensional residual image data stored in said storing means, in

accordance with swinging of said housing,

wherein said light-emission control means controls light emission so that a light-emission period of said light-emitting diodes based on said two-dimensional residual image data is equal to or less than 1/30 second.

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4. The residual image display device according to any one of claim 1 to claim 3,

further comprising a detecting means for detecting a change of a swing direction of said housing,

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wherein, with using a timing when said detecting means detects the change of the swing direction as a standard timing, after only a period from a finishing timing of last light-emission of said light-emitting diodes by said two-dimensional residual image data to said timing when said detecting means detects the change of the swing direction is passed, said light-emission control means starts light-emission of said light emitting diodes by said two-dimensional residual image data.

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5. A residual image display device, comprising:

a substantially bar-shaped housing;

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a plurality of light-emitting diodes arranged along a longitudinal direction of said housing;

a plurality of back face light-emitting diodes arranged along said longitudinal direction of said housing, in a back face of said housing that is a reverse-side of said plurality of light-emitting diodes;

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a light-emitting means for making said light-emitting diodes and said back face light-emitting diodes emit light individually;

a light-receiving means for outputting a signal based on photoelectromotive force of each of said plurality of light-emitting diodes;

a scanning control means for controlling said light-emitting means to make each of said light-emitting diodes emit light which is positioned  
5 neighboring said each of said light-emitting diodes that said light-receiving means outputs said signal based on the photoelectromotive force of, and for controlling said light-receiving means to output said signal in the light-emitting state;

a generating means for generating two-dimensional residual image  
10 data used for light-emission control of said light-emitting diodes, based on the signals which are outputted from said light-receiving means and which are based on the photoelectromotive force of said light-emitting diodes;

a storing means for storing said two-dimensional residual image data;  
and

15 a light-emission control means for controlling said light-emitting means to make said plurality of light-emitting diodes and said back face light-emitting diodes emit light based on said two-dimensional residual image data stored in said storing means, in accordance with swinging of said housing.

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6. A residual image display device, comprising:

a substantially bar-shaped housing;

a plurality of light-emitting diodes arranged along a longitudinal direction of said housing;

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a plurality of different color light-emitting diodes emitting light of a color different from that of said plurality of light-emitting diodes, being

arranged correspondingly to each of said plurality of light-emitting diodes;

a light-emitting means for making said light-emitting diodes and said different color light-emitting diodes emit light individually;

5 a light-receiving means for outputting a signal based on photoelectromotive force of each of said light-emitting diodes;

a scanning control means for controlling said light-emitting means to make each of said light-emitting diodes emit light which is positioned neighboring said each of said light-emitting diodes that said light-receiving means outputs said signal based on the photoelectromotive force of, and for  
10 controlling said light-receiving means to output said signal in the light-emitting state;

a generating means for generating two-dimensional residual image data used for light-emission control of said light-emitting diodes, based on the signals which are outputted from said light-receiving means and which  
15 are based on the photoelectromotive force of said light-emitting diodes;

a storing means for storing said two-dimensional residual image data;  
and

a light-emission control means for controlling said light-emitting means to make said plurality of light-emitting diodes emit light based on said  
20 two-dimensional residual image data stored in said storing means, and controlling said light-emitting means to make said plurality of different color light-emitting diodes corresponding to each of said light-emitting means which dose not emit light, in accordance with swinging of said housing.

25 7. The residual image display device according to claim 6,  
wherein said scanning control means controlling, instead of to make

each of said light-emitting diodes emit light which is positioned neighboring  
said each of said light-emitting diodes to perform scanning, to make each of  
said different color light-emitting diodes emit light which is positioned  
neighboring said each of said light-emitting diodes to perform scanning, and  
5 for controlling to make said each of light-emitting diodes receive reflected  
light of said light.